

Docket No. 205328US0  
IN RE APPLICATION OF: Thomas SCHAEFER, et al.  
SERIAL NO: 09/903,777  
FILED: July 13, 2001  
FOR: HYDROGEN CYANIDE SYNTHESIS PROCESS



RECEIVED  
DEC 17 2003  
TC 1700  
"RESPONSE UNDER 37 CFR 1.116-  
EXPEDITED PROCEDURE EXAMINING  
GROUP 1751"

COMMISSIONER FOR PATENTS  
ALEXANDRIA, VIRGINIA 22313

SIR:

Transmitted herewith is an Amendment under 37 CFR 1.116 in the above-identified application.

- ☒ No additional fee is required  
☐ Small entity status of this application under 37 C.F.R. §1.9 and §1.27 is claimed.  
☐ Additional documents filed herewith:

The Fee has been calculated as shown below:

CLAIMS	CLAIMS REMAINING		HIGHEST NUMBER PREVIOUSLY PAID	NO. EXTRA CLAIMS	RATE	CALCULATIONS
TOTAL	7	MINUS	20	0	x \$18 =	\$0.00
INDEPENDENT	1	MINUS	3	0	x \$86 =	\$0.00
		<input type="checkbox"/> MULTIPLE DEPENDENT CLAIMS			+ \$290 =	\$0.00
		TOTAL OF ABOVE CALCULATIONS				\$0.00
		<input type="checkbox"/> Reduction by 50% for filing by Small Entity				\$0.00
		<input type="checkbox"/> Recordation of Assignment			+ \$40 =	\$0.00
		TOTAL				\$0.00

- ☐ A check in the amount of \$0.00 is attached.  
☐ Credit card payment form is attached to cover the fees in the amount of \$0.00  
☒ Please charge any additional Fees for the papers being filed herewith and for which no check or credit card payment is enclosed herewith, or credit any overpayment to deposit Account No. 15-0030. A duplicate copy of this sheet is enclosed.  
☒ If these papers are not considered timely filed by the Patent and Trademark Office, then a petition is hereby made under 37 C.F.R. §1.136, and any additional fees required under 37 C.F.R. §1.136 for any necessary extension of time may be charged to Deposit Account No. 15-0030. A duplicate copy of this sheet is enclosed.

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IN THE CLAIMS

Please amend the claims as follows:

Claim 1 (Currently Amended): A process for the synthesis of hydrogen cyanide,  
comprising:

reacting membrane or methane-containing natural gas, ammonia and oxygen-enriched  
air or oxygen in the presence of a catalyst comprising platinum or a platinum alloy;  
wherein oxygen and nitrogen are present in a molar ratio which satisfies the following  
relationship:

$$\frac{[O_2]}{[O_2 + N_2]} = 0.25 \text{ to } 1.0;$$

wherein methane and ammonia are present in a molar ratio of

$$\frac{[CH_4]}{[NH_3]} = \frac{\cancel{0.95 \text{ to } 1.05}}{\underline{0.98 \text{ to } 1.02}};$$

and wherein a molar ratio of ammonia to the sum of oxygen and nitrogen satisfies the  
following relationship:

$$Y = m \cdot X - a,$$

wherein

$$Y = \frac{[NH_3]}{[O_2 + N_2]}$$

$$X = \frac{[O_2]}{[O_2 + N_2]}$$

$m = 1.25 \text{ to } 1.40$ ; and

$a = 0.05 \text{ to } 0.14$ .

Claim 2 (Original): The process according to Claim 1, wherein said molar ratio of oxygen and nitrogen is

$$\frac{[O_2]}{[O_2 + N_2]} = 0.25 \text{ to } 0.40.$$

Claim 3 (Cancelled).

Claim 4 (Original): The process according to Claim 1, wherein  $m = 1.25$  to  $1.33$  and  $a = 0.07$  to  $0.11$ .

Claim 5 (Original): The process according to Claim 1, wherein the starting-gas mixture is preheated to at most  $150^\circ\text{C}$ .

Claim 6 (Original): The process according to Claim 1, wherein a volume flow for ammonia and methane or the methane-containing natural gas is calculated and controlled as a function of a molar ratio  $X = O_2/(N_2 + O_2)$  using a process control system.

Claim 7 (Canceled).

Claim 8 (Original): The process according to Claim 1, wherein said process is performed in a conventional Andrussov-reactor.

Claims 9-14 (Canceled).

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Reply to Office Action of: September 16, 2003

Claim 15 (Previously Presented): The process according to Claim 1, wherein said methane-containing mixture gas contains at least 88 vol.% of methane.: